

EXHIBIT 23



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EXPERT REPORT OF CHRISTOPHER ERATH, Ph.D.

My name is Christopher Erath and I am a Director at BLDS, LLC in Natick, Massachusetts. BLDS is a consulting firm specializing in the analysis of labor market outcomes. I received a Ph.D. in economics from the University of Wisconsin where my fields of interest included labor economics, econometrics, and industrial organization. My curriculum vitae is attached hereto.

I have been requested to review the expert report submitted by Harold Goldstein and Charles Scherbaum (G&S) in support of plaintiffs' allegations in Darryl Chalmers et al v. City of New York. G&S note that they were asked to examine three propositions: (1) whether the nature of the work performed by fire protection inspector job titles at the New York City Fire Department ("FDNY") is similar to work performed by inspectors at the New York City Department of Buildings ("DOB") and whether there is a job-related reason for any difference; (2) whether there are disparities in racial composition between FDNY inspectors and DOB inspectors; and (3) if there are differences in compensation between these jobs.

In this report I comment on G&S's failure to consider labor market evidence relevant to (1) and also address the portions of the G&S report relevant to (2) and (3). G&S ultimately conclude that the work performed by inspectors at FDNY and DOB is similar and are unable to find a job-relevant reason for a

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difference in compensation.¹ However, they do not consider whether inspectors move from FDNY to DOB, as would be expected were their conclusion of similar jobs with different pay accurate. When I investigate such mobility, I find that no one moved from Fire Protection Inspector (“FPI”) at FDNY to a DOB Inspector title and few even began the process of seeking a DOB Inspector job, directly contradicting the G&S conclusion.

On their racial composition claim, I find errors in their calculations and that their failure to consider qualifications invalidates their conclusion. Finally, despite claiming to evaluate compensation they look only at base salary, omitting both pecuniary and nonpecuniary aspects of both positions. Consequently, they can draw no valid conclusion regarding compensation of FPIs and DOB Inspectors.

I address each of these shortcomings in turn.

Labor Market Evidence

Plaintiffs’ theory is that “FDNY and DOB Inspector jobs are similar in terms of tasks performed” and G&S note “we have not seen a job-relevant rationale for why these similar jobs would be paid differently.” G&S reach these conclusions by examining the tasks they believe are relevant to each job, but at no point do they examine relevant labor market evidence.

If, as plaintiffs allege, the FPI and DOB Inspector jobs are similar and the DOB positions are paid more, we should observe those in the FPI position attempting to switch jobs and become DOB Inspectors. As discussed below, G&S have considered only a portion of the compensation of these jobs and therefore can reach no valid conclusion about relative compensation. For purposes of this section, however, I will adopt plaintiffs’ claims that FPIs and DOB Inspector positions are similar and that the latter has greater compensation.

FPI and DOB Inspector jobs are civil service jobs and require, among other qualifications, completion of a written test. I obtained data showing exams applied for by those who held an FPI position during the 2005-2020 period studied by G&S. These data covered 669 FPIs. Of these, 12 (1.8%) applied for an exam for a DOB Inspector position. In one of these cases, the individual served in the DOB position

¹ I am not a job content expert and take no position on the “nature of the work” portion of the G&S report beyond the labor market evidence described here.

of Inspector (Construction), resigned, and then became an FPI. The other 11 never held any DOB Inspector position.

I requested information concerning the applications of these 11 DOB Inspector candidates. One applied twice, and consequently there are 12 applications to examine. In four cases, the individual failed the multiple choice test, which ended the application. In another four cases, the individual did not take the multiple choice test, again ending the application. Another passed the multiple choice but failed to establish the minimum education/experience required and could not receive the position. The final three passed and received list numbers, a prerequisite to be hired, but were not hired. Thus, nine of the 12 applications for Inspector (Construction) ended with the applicant failing to qualify.

Very few FPIs attempted to obtain DOB Inspector positions. Among the few who did, only three of 12 applications resulted in a civil service list number, and none of those was hired. These data are inconsistent with the notion that FPI and DOB Inspector jobs are comparable except for compensation.

The nearly complete absence of FPIs applying for an exam which was a necessary prerequisite for a DOB Inspector job is not because of any reluctance on the part of FPIs to apply for other exams. Looking again at the period after 2004, I see that FPIs applied for roughly 250 different jobs, with said jobs ranging from Forester to Crime Specialist to Bus Operator. One individual applied for 47 exams. Nearly 80 percent of FPIs applied for an exam other than FPI or Associate FPI.

These results are inconsistent with plaintiffs' allegations. Similar jobs with different pay should lead to attempted and actual movement into the higher-paying job, yet neither occurred. Indeed, the only move between an FPI and a DOB Inspector is from DOB Inspector to FPI.

Two potential explanations for this result are that (1) FPIs do not qualify for the DOB Inspector jobs or (2) a narrow focus on annual salary without regard to other aspects of the jobs inadequately captures compensation.

I obtained the notices of examination (NOE) for an FDNY FPI and DOB Construction FPI Inspector positions. FPI exams for 2009-2015 (there was no exam notice in 2016) required education and experience of:

1. 3 years experience in: (a) fire suppression, alarm or extinguishing systems or refrigeration/AC systems with 5 horsepower or greater, (b) installation and repair of fuel oil heating systems, (c) safety standards and programs in manufacture and/or storage of materials which are potential fire hazards, (d) inspection of premises to detect potential for

- fire or explosions, or (e) inspection of facilities for compliance with fire and building codes;
or
- 2. 3 years experience as a NYC Certified Safety Director or Construction Site Fire Safety Manager - at least one year must have been spent on one of the activities described above;
or
- 3. 30 semester credits in fire science, engineering, or chemistry; or
- 4. completion of a union-sponsored plumbing apprenticeship program and two years relevant plumbing experience; or
- 5. combination of education and experience equivalent to one of the above.

Per the FPI NOE, other requirements such as a driver's license also existed, and then the applicant would need to score 70% on the multiple choice test for the position, a test designed to cover reasoning, written comprehension, and visualization, among other things. Notably, this test lacks a knowledge component and focuses on general skills.

In 2017 the third requirement above was changed to an Associate's Degree in any major or a high school diploma and 20 credits in particular areas.

Examining the Construction Inspector notices for 2010 and 2014 shows a requirement of:

- 1. Five years' experience in the construction trades in certain disciplines or
- 2. A license as a professional engineer or registered architect; or
- 3. Three years of experience as in (1) plus two years of training or education in an acceptable construction program; or
- 4. Three years of experience in the apprentice program offered by DOB as well as other experience.

These requirements were changed for the 2019 NOE to replace (1) with two years of such experience, to add a license as a Site Safety Manager as a possibility for (2), to add 60 semester credits toward an engineering or architecture degree, to lessen the requirement in (3) to one year of experience and one year of education in an acceptable construction program, and to change (4) to two years.²

The NOE states that the multiple choice test is knowledge-based, including questions on "construction materials; construction, alterations and repairs done on structures by carpenters, masons, plasterers and iron workers; interpretation of the Building Code and Zoning Regulations; construction plans and specifications; safety practices; effective communication; filling out forms and report writing;

² Other DOB Inspector positions carry specific requirements – for instance, Boiler inspectors need boiler-specific experience.

job related calculations; reading comprehension; and other related areas.” This stands in contrast to the test for FPI.

Knowledge, experience and education requirements clearly differ between the positions. Under such circumstances it would be surprising to see much movement between FPI and DOB Inspector, and indeed such movement does not occur. Lack of movement directly contradicts plaintiffs’ maintained hypothesis that the jobs are similar.

Compensation Is More Than Salary

In their overview, G&S state that one of their assignments was to determine whether there are disparities in the compensation received between FPIs and inspectors at DOB. However, rather than performing this task they simply analyze base salary even though “compensation” has other aspects.

Both FPIs and DOB Inspectors receive differentials to recognize length of service and other lesser payments are also available. G&S do not explain why they do not analyze all elements of the regular paycheck.

The theory of compensating wage differentials is standard in labor economics. Ehrenberg and Smith’s *Modern Labor Economics* text devotes a chapter to the concept, noting “the assumption that workers are attempting to maximize utility implies that they are interested in both the pecuniary and nonpecuniary aspects of their jobs” and “it is clear that pay is not all that matters.”³ Pay differs by working conditions, reputation, available benefits, and numerous other factors.

G&S note one such non-salary difference in their report – FPIs had shorter work weeks. On page 41 they note that FPIs worked 35 hour weeks until August 2016 at which point the workweek increased to 37.5 hours per week. DOB Inspectors have always worked 40 hours per week; FPIs consequently have enjoyed either 2.5 or 5 additional hours of time off per week. G&S assign no value to these hours, understating the compensation of FPIs and overstating any difference in compensation.

Relatedly, a recent recruitment brochure for FPIs advertises that FPIs work only 37.5 hours and are not required to work weekends, indicating that FDNY believes a shorter work week and time off through a regular schedule to be an advantage worthy of mention.

³ Ronald Ehrenberg and Robert Smith, *Modern Labor Economics*, 8th edition, pp. 231-232.

A second shortcoming of the G&S analysis is that it is static. Even if two jobs were identical in many ways including hourly rate of pay, if one job permitted an applicant to start work sooner or be promoted faster, that job's compensation would be superior. Consider someone with none of the qualifications noted above for either the FPI or DOB Inspector position. There are obvious differences in the time required to meet the listed qualifications – from the first listed qualification, Construction Inspectors require five years of experience and FPIs three. Meeting requirements in three years instead of five allows a candidate to begin earning sooner and move to the incumbent rate sooner.

It is also the case that FPIs are more likely to be promoted to the Associate level than are DOB Inspectors. I used the data file G&S relied on for their analysis and categorized employees by whether they were an FPI or DOB Inspector and by whether they ever became the (higher-level and higher-paying) Associate version of their position. This analysis was limited to those employees observed at the non-Associate level. Limiting the data to those observed for at least three years in the data, 51 percent of FPIs advanced to Associate FPI compared to 32 percent of DOB Inspectors who advanced to the Associate level among DOB inspectors.⁴ This is a highly statistically significant difference.

The named plaintiffs also articulated reasons to work as an FPI rather than a DOB Inspector. Lead plaintiff Darryl Chalmers was asked about applying to DOB and testified that:

Because I was -- when you work for the fire department, the work that we do was just so enjoyable so I just stayed at the fire department, I didn't feel like switching over to the Department of Buildings.

In fact, I will give you a little history. When I was at the fire department we all, who came from HPD, passed the HPD test and HPD was asking us to come back when they let us go as provisionals under Mayor Dinkins and we all said, look, I am at the fire department now, why would I even think about going, so I will just stay where I am at, but DOB -- another reason I didn't want to go to DOB at the time they had a lot of corruption, it seemed like these guys were bribery, stuff like that, and a lot of guys didn't want to be involved. We would like to get the salary that they had, but as far as they had a lot of problems...

Yeah, yes, I mean, you know what it is, Jonathan, a lot of people, they say, well, you know, where do you work, I work for the fire department. So a lot of people like the fact of the work that we do in the fire department. When you go out in the field everyday and you see how you are protecting the public and the good work that you do to keep people safe, you are like, it is exciting, so you see a violation, you say, you can't have this, and you explain to the owners too, listen, your insurance wouldn't even pay you if you don't fix this and I have to give you a violation for this, and the main thing is when you see how you are keeping people safe it is gratifying, you understand what I am saying, and then when you go to witness a standpipe

⁴ There was also a statistically significant difference in promotion rates if I required only one year observed in the data or if I used five years as the minimum.

system at a construction pipe and you see they are doing the wrong thing at a manifold -- I am giving you terms you may not know -- but you see them at the manifold and you said, the firefighters have to hook up to this, you know, you got to keep this clear, you feel good about it, you feel gratified about it, so that was the main reason why I stayed at the fire department.⁵

Named plaintiff Darren Connors discussed how non-monetary factors were more important:

Q. Did you ever consider taking a civil service exam to become a department of buildings building inspector?

A. Yes.

Q. Why did you decide not to?

A. Because at one point, I did apply for that position as a buildings inspector provisional and I received a job offer from the department of buildings.

Q. When was that?

A. 2005, 2006.

Q. Was that to become an inspector?

A. Yes.

Q. Why did you not take that job offer?

A. Because of the history and reputation of the New York City of building department inspectors.

Q. What do you mean?

A. It is long known in this city that some building inspectors do take bribes and it had been in the news especially at that time.

Q. You said that was in 2005 or 2006?

A. Yes.

Q. At that point were you already an FPI?

A. Yes.

Q. Why did you apply for that job, the building inspector job?

A. The pay difference between the building inspectors and FPIs.

Q. So in your view it was not worth to take the pay increase because of the reputation of the building inspectors.

A. Yes, after seeing the inner office and speaking to the person who was in charge of hiring provisional it was not worth it for me.

Q. Can you explain what you mean by that?

A. After being an FPI in the culture of what we do, it is very different in what the building department expects out of its inspector.

Q. What do you mean by that? How is it different?

A. FDNY the bureau of fire prevention the inspectors boots on the ground put life and safety above all.

Q. And the building inspectors don't?

A. In my limited experience in speaking to some of the inspectors at the time, yes.

Q. What do think they put above life safety?

A. That I don't know, but I know it wasn't the top priority when you do an inspection.

Q. Were there any other reasons why you decided not to take that job as a provisional building inspector at DOB?

A. No.

⁵ In *The Wealth of Nations*, Adam Smith noted that wages would be expected to vary with the "honourableness or dishonourableness of the employment." Quoted in Ehrenberg and Smith, *Modern Labor Economics*, p. 237.

Other Issues in the G&S Report

Aside from examining only part of compensation, there are also issues with the conclusions drawn, data, and methodology in the G&S report.

The focus of the first section of the G&S report is a comparison of the racial composition of the FPI and DOB Inspector positions. To obtain racial composition figures, G&S rely upon a spreadsheet of employees who held a relevant position from 2004-2020 and use this spreadsheet to generate counts of people by job, race, and fiscal year.

I reviewed the same spreadsheet as well as the programming produced with the report and it appears that G&S intended to present counts of active employees as of the end of each fiscal year. Indeed, I can replicate certain of their figures by limiting the data in this way. However, in other cases their tally of employees is simply wrong. This is most evident in 2020 when G&S report 98 people in the title of Associate Inspector (Construction) even though this title was eliminated in 2019.

This is not the only entry that appears inaccurate. Looking at the data set G&S provided, employees are double counted if they changed jobs within a fiscal year – they are counted both in their new and old jobs. This inflates the counts of people in the Inspector jobs.

Additionally, the listed race in the spreadsheet for a single individual can be reported in one year but not another. I see no indication that G&S used such information to fill in missing race.

Even were I to disregard the errors in the counts and percentages, G&S's comparisons of the racial composition of the FPI and DOB Inspector positions do not account for the possibility that the respective qualified applicant pools differ by race. Both the FPI and DOB Inspector jobs are civil service jobs and the agencies can only hire those certified as qualified applicants. As noted above, the qualifications sought are different, as are the tests required. There is no a priori reason to expect the racial composition of those possessing different qualifications and passing different tests to be identical, yet the G&S report is premised on this assumption. Every statistical test G&S report rests upon the assumption that Inspectors at FDNY and DOB should have identical racial composition.

This problem is exacerbated in the comparisons G&S provide at pages 12-14 showing racial composition for the entire FDNY and DOB populations. These broad groups include numerous other positions not alleged to be similar and with dissimilar required qualifications and there is no information to be gleaned from such overbroad comparisons.

Ultimately G&S conclude that the DOB Inspector titles are predominately white and FDNY titles predominately minority; even this conclusion is at odds with their own recent data, which show DOB Inspector jobs becoming more minority over time and less than 50% white since 2018.

The final section of the G&S report examines the salary for FPI and DOB Inspector positions. This section begins by presenting data from the Occupational Employment Statistics survey conducted by the BLS showing that the average hourly wage for Fire Protection Inspectors nationwide is greater than that for Construction Inspectors, unlike NYC. Such broad national comparisons are of limited value and may reflect differing definitions of jobs or allocation of responsibilities between different jobs in different cities, states, or towns. For instance, the nationwide data from the OES also show that FPIs are paid nearly \$10,000 more per year than Firefighters, a conclusion at odds with pay in NYC.

Moreover, G&S cite the wrong data. At page 42 they cite a wage of \$32.54 nationally for Fire Inspectors.⁶ Their source shows \$31.26 for Fire Inspectors; \$32.54 is the figure for Fire Inspectors and Investigators, which they acknowledge in a footnote. The Fire Inspector figure is less than the figure for Construction Inspectors.

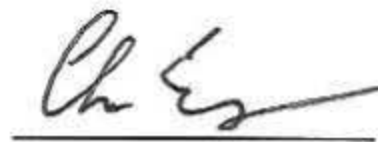
The compensation section of the G&S report serves little purpose. As described above, it does not examine compensation but rather is limited to base salary. It also fails to address the stark differences in requirements for FPIs and DOB Inspectors discussed above. Instead, page 46 contains a reference to “common job relevant factors” including tenure, time in current job, education or performance. The term “tenure” is not defined there, but G&S make no attempt to take education or pre-NYC or pre-FDNY/DOB experience into account despite the obvious relevance of these measures. Given the contrasting prerequisites for FPI and DOB Inspector positions, qualifications prior to assuming these jobs are of obvious relevance and not accounted for by G&S.

The only factor G&S attempt to incorporate is time in the current job, omitting any measure of education or previous experience. Moreover, given that G&S are only studying base salary which per the collective bargaining agreement does not vary with time in the job other than a move from entry to incumbent rate after two years, time in the current job is of little relevance.

⁶ Table 16 in the G&S report shows 32.43 for this figure; why these numbers are different is unclear.

Conclusion

G&S list five conclusions on page 57 of their report. The first is that FDNY and DOB Inspectors perform similar tasks, and this conclusion is inconsistent with the lack of movement from FPI to DOB Inspector. The second is that the jobs have similar knowledge, skill, and ability requirements, a conclusion at odds with the requirements for each job. Third is that the DOB Inspector jobs are predominately white and FDNY minority, and G&S's data are flawed but even so show DOB jobs were less than 50 percent white in several years. Fourth, the claim is that DOB Inspectors are paid significantly more, but this conclusion is based only on base salary and no other element of compensation. Finally, G&S claim to see no job-related reason for the salary difference, disregarding the lack of movement from FPI to DOB Inspector and the differences in qualifications sought.



Christopher Erath

June 29, 2021

Materials Relied Upon

1. Report of Goldstein and Scherbaum and supporting materials
2. Exam Applicant Data for FPIs (6.21.21).xlsx
3. Darren Connors deposition transcript
4. Darryl Chalmers deposition transcript
5. CBA, building and construction inspectors, 2005-07
6. OES data for Fire Inspectors, Fire Inspectors and Investigators, NS Construction Inspectors, accessed at bls.gov.
7. Inspector (Construction) NOEs for exams 1011, 5008, 0115, and 1164.
8. FPI NOEs for exams 0120, 1002, 2002, 3058, 4034, 5031, 6021, 7023, and 0804.
9. DCAS Supplement for Associate Inspector (Construction) spreadsheet.
10. Inspector Title Employee Data spreadsheet.
11. Ronald Ehrenberg and Robert Smith, Modern Labor Economics, 8th Edition.
12. FDNY Fire Inspection Inspector Flyer
13. Cbu004-engineering-and-scientific-agreement-03032008-03022010.pdf
14. <https://www1.nyc.gov/assets/dcas/downloads/pdf/noes/inspectorboilers.pdf>
15. E-mail concerning FPI applicants to Inspector (Construction) position.